

ABSTRACT OF THE DISCLOSURE**5 METHOD AND SYSTEM FOR FRAGMENT LINKING
 AND FRAGMENT CACHING**

 A method, a system, an apparatus, and a computer
program product are presented for fragment caching.
10 After a message is received at a computing device that
contains a cache management unit, a fragment in the
message body of the message is cached. Subsequent
requests for the fragment at the cache management unit
result in a cache hit. The cache management unit
15 operates equivalently in support of fragment caching
operations without regard to whether the computing device
acts as a client, a server, or a hub located throughout
the network; in other words, the fragment caching
technique is uniform throughout a network. Cache ID
20 rules accompany a fragment from an origin server; the
cache ID rules describe a method for forming a unique
cache ID for the fragment such that dynamic content can
be cached away from an origin server.

100-441634-1001

UNITED STATES PATENT AND TRADEMARK OFFICE
DOCUMENT CLASSIFICATION BARCODE SHEET



Drawings

7

Level - 2
Version 1.1
Updated - 8/01/01

Patent Classification Barcode Sheet

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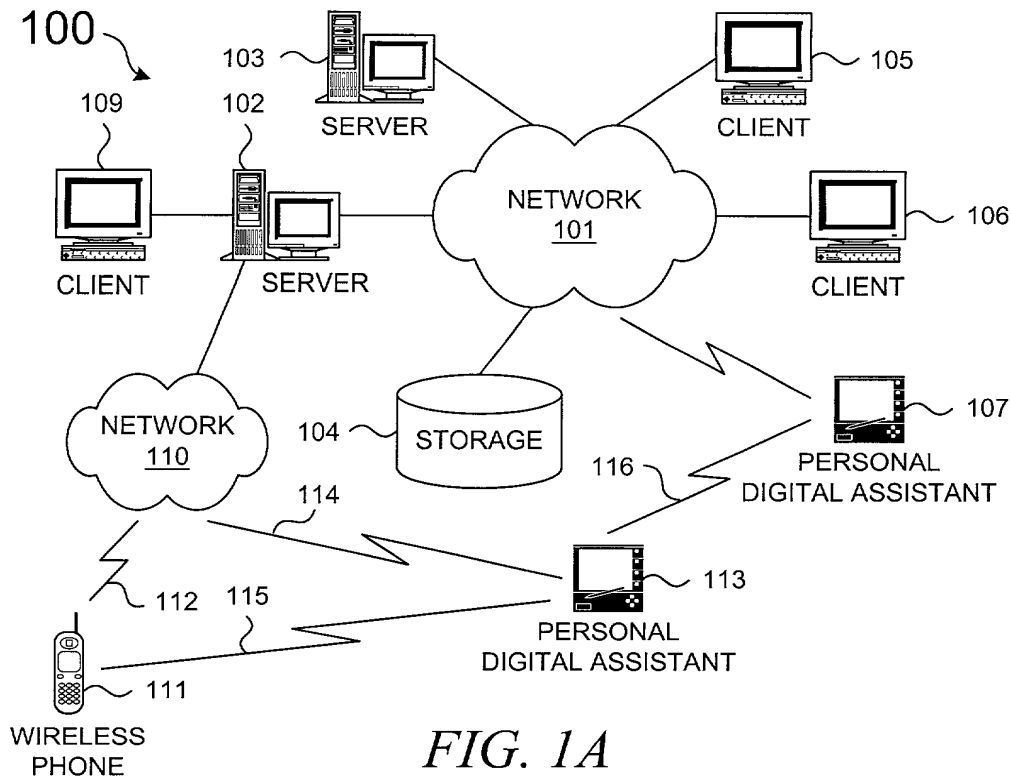


FIG. 1A
(PRIOR ART)

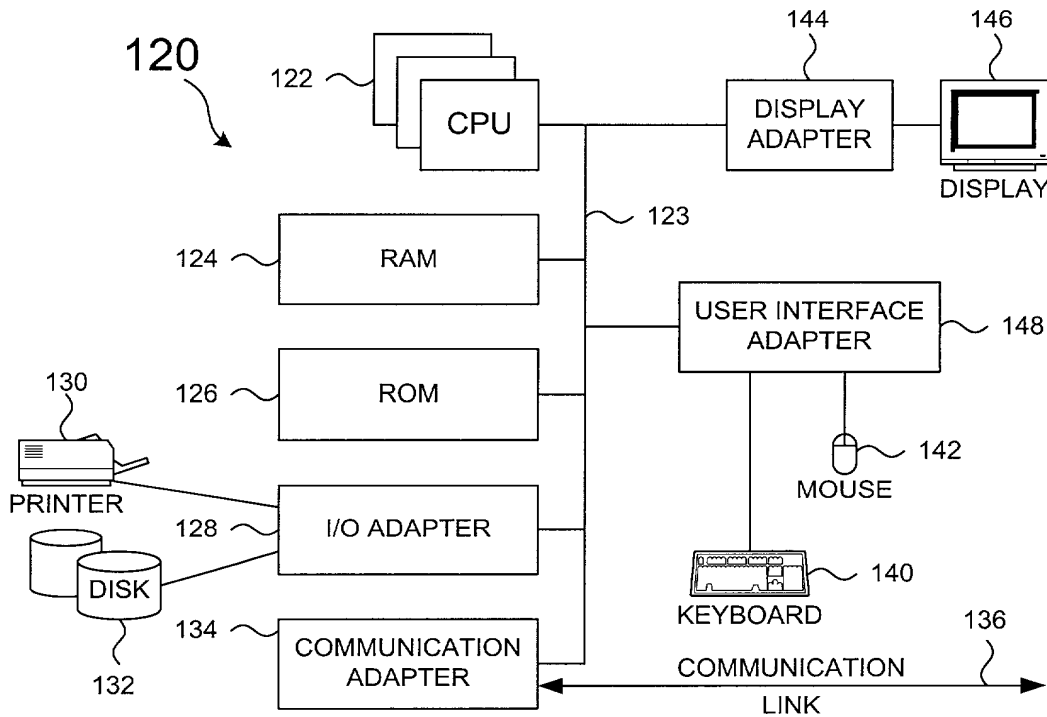


FIG. 1B
(PRIOR ART)

FIG. 1A (PRIOR ART)

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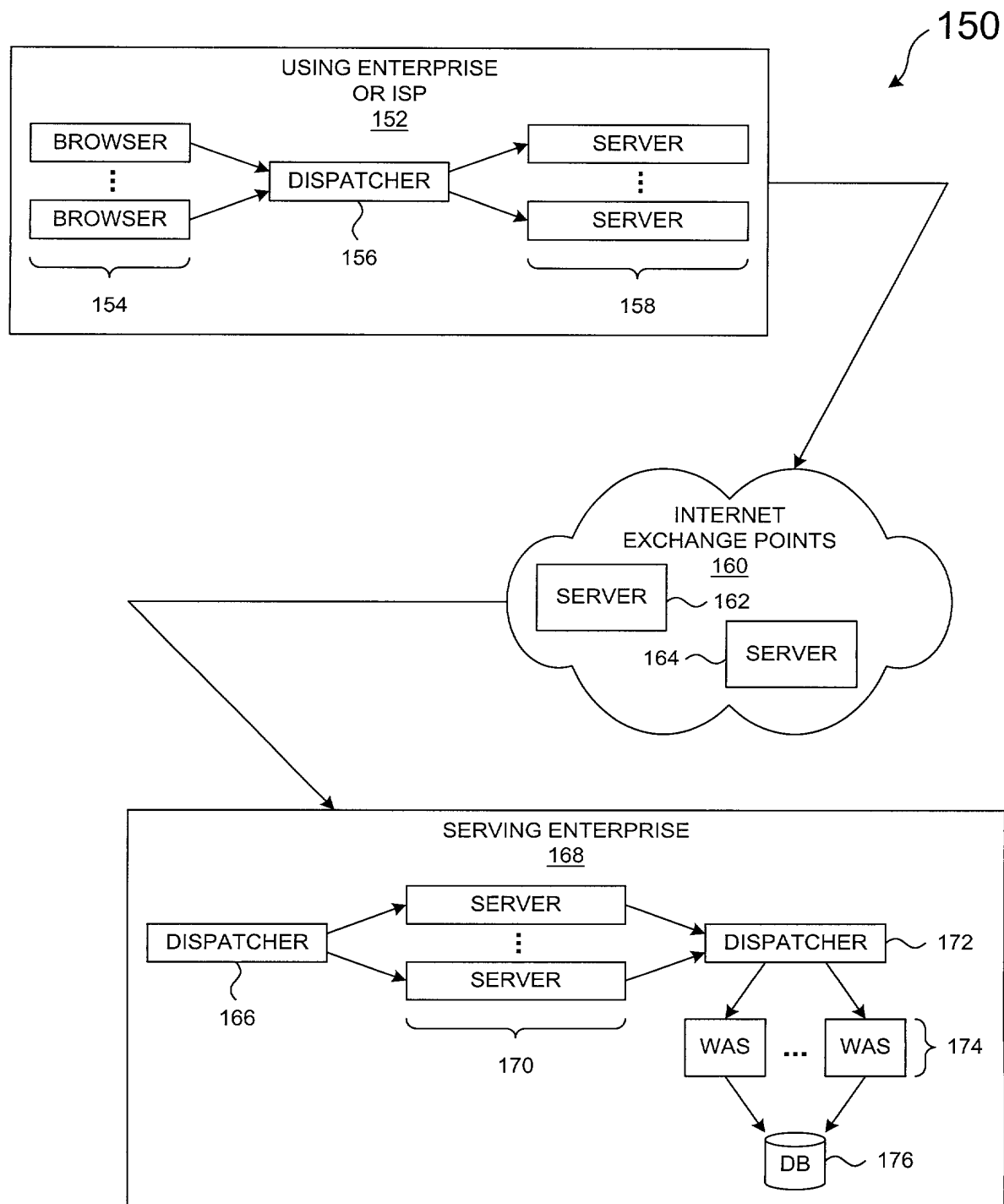


FIG. 1C
(PRIOR ART)

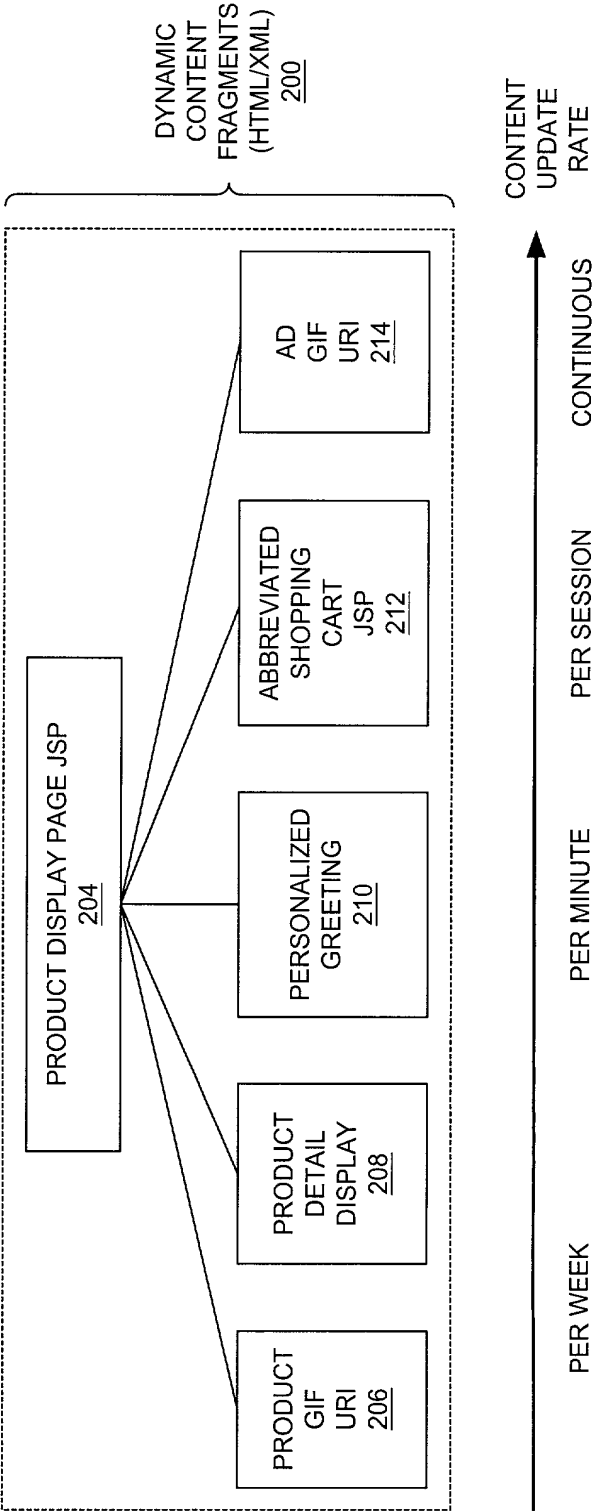


FIG. 2

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```
<!ELEMENT FRAGMENTLINK - O EMPTY -- fragment directive -->
<!ATTLIST FRAGMENTLINK
src      %URL      #REQUIRED -- primary URL of the fragment
alt      %URL      #IMPLIED  -- alternate URL of the fragment
parms    %parmlist #IMPLIED  -- query parms applied to src
foreach %string    #IMPLIED  -- name of cookie used for
                                -- foreach processing
showlink no|comment|CDATA #IMPLIED
    -- whether this fragmentlink tag should be included as a
    -- comment in the assembled page
id       ID        #IMPLIED  -- unique name of this element
class    CDATA     #IMPLIED  -- class name of this element
>

<!ENTITY % parmlist "CDATA"
    -- Space delimited list of form element names
-->

Start tag: required; End tag: forbidden.
```

FIG. 3

```
Fragment = "Fragment" ":" 1#fragment-directive

fragment-directive = fragment-request-directive
                   | fragment-response-directive

fragment-response-directive = "contains-fragments"
                           | "dependencies" "=" quoted-list
                           | "cacheid" "=" rulelist

fragment-request-directive = "supports-fragments"

quoted-list = "<" 1#string ">"

rulelist = "<" 1#cacherule ">"

cacherule = "(" parmrule ["," cookierule] ")" | "URL"

parmrule = 1#parmname
parmname = string | "[" string "]"

cookierule = 1#cookieName
cookieName = string | "[" string "]"
```

FIG. 4

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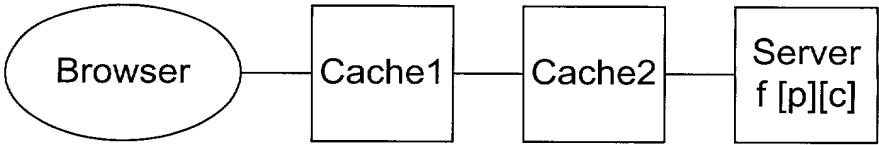


FIG. 5A

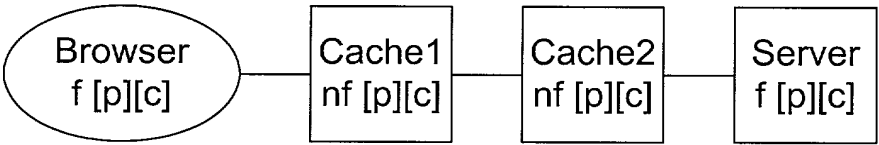


FIG. 5B

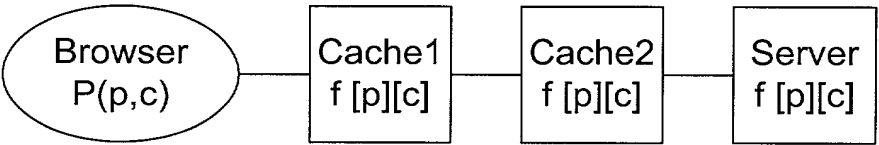


FIG. 5C

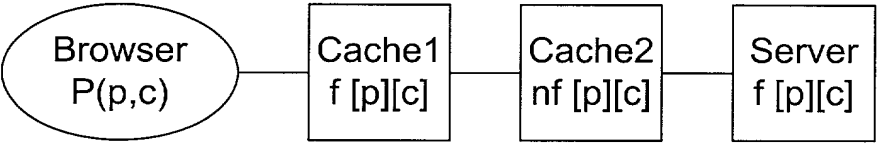


FIG. 5D

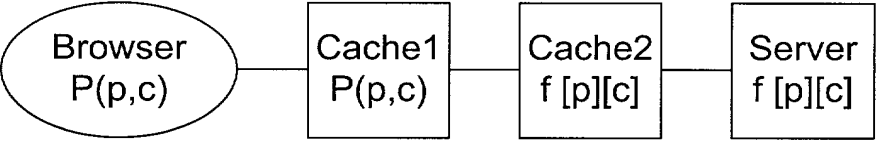


FIG. 5E

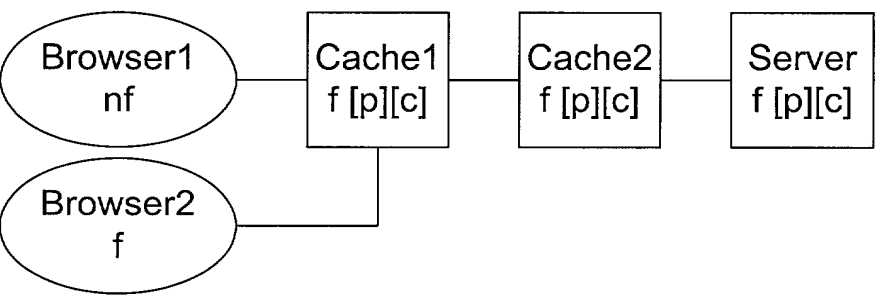


FIG. 5F

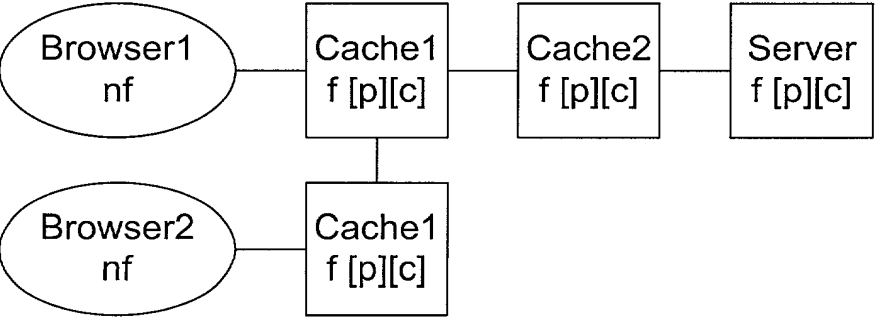


FIG. 5G

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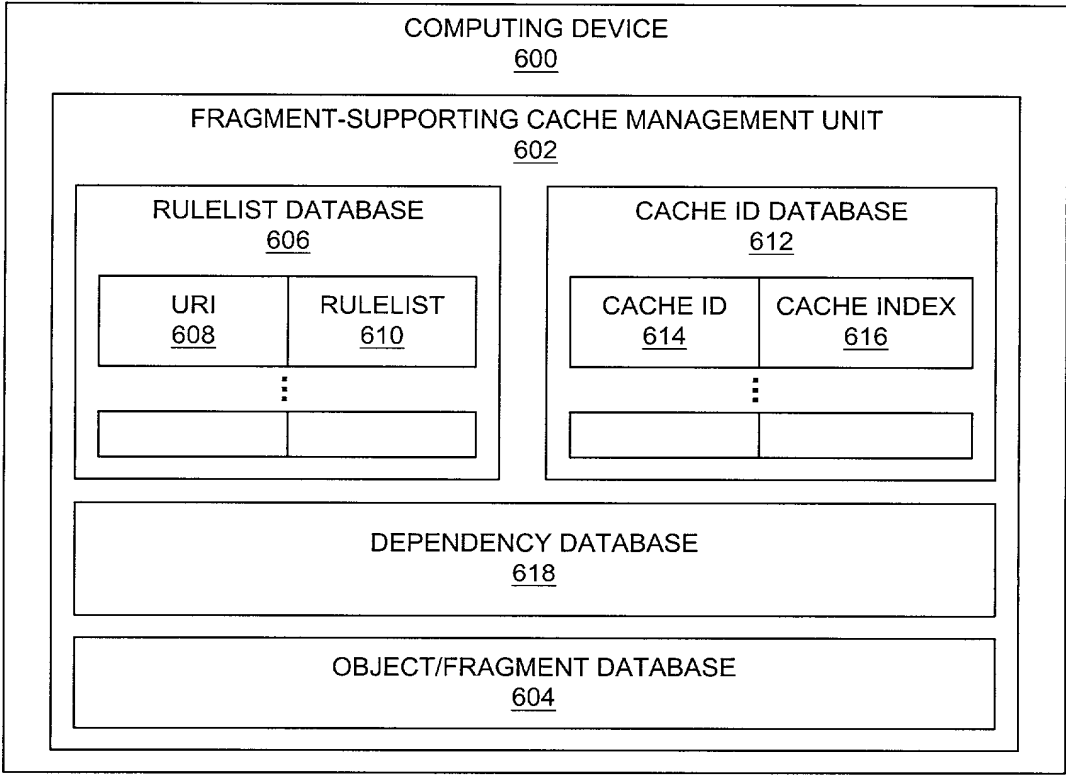


FIG. 6A

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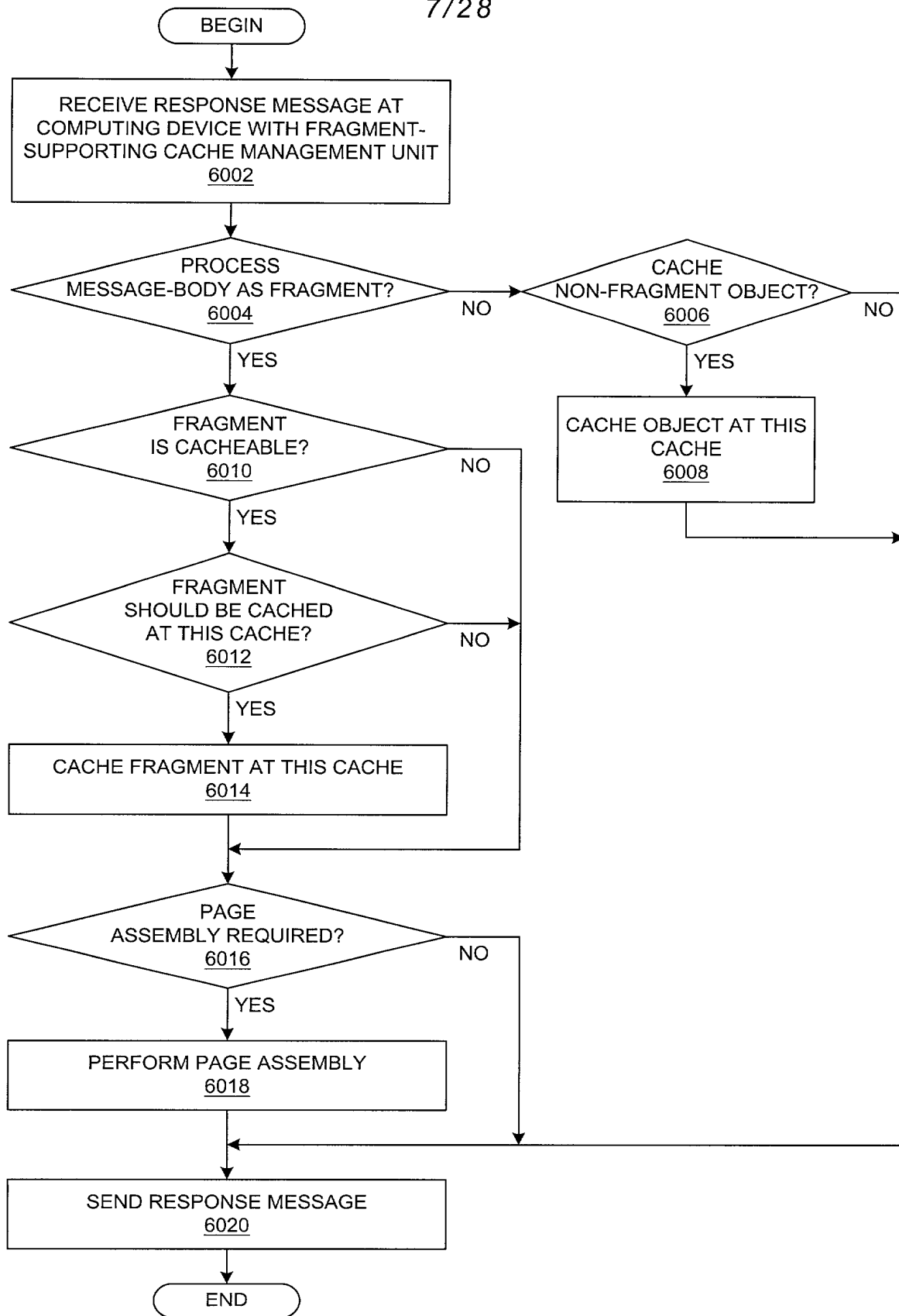
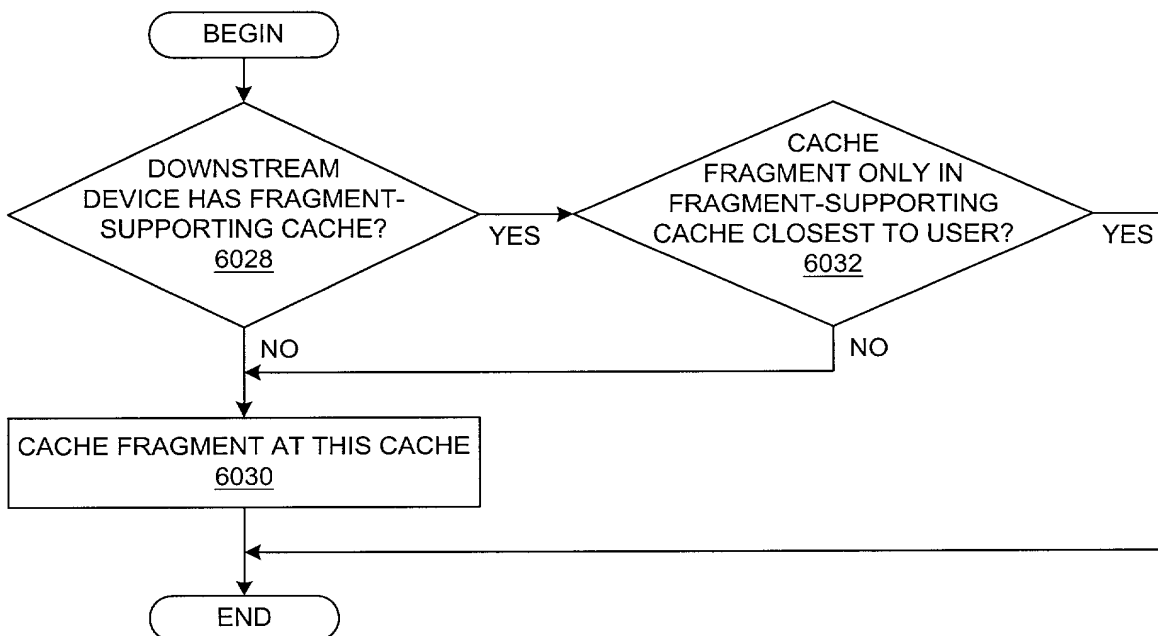
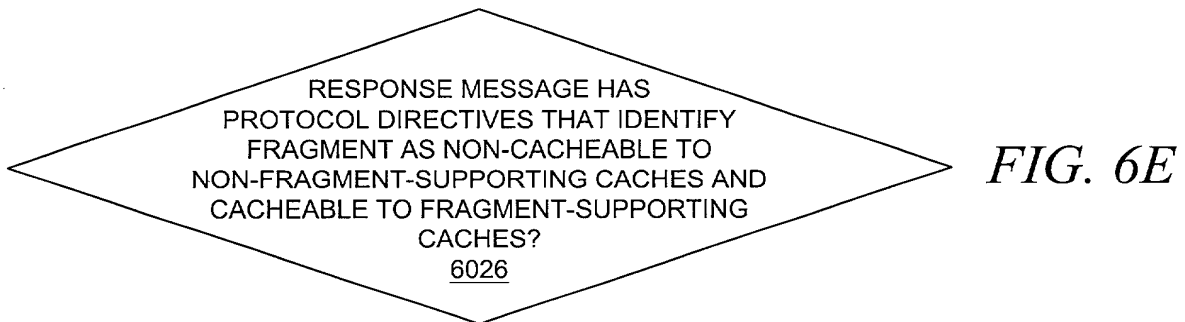
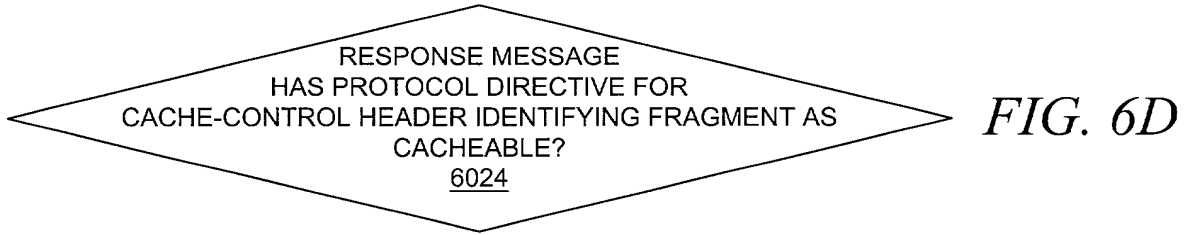
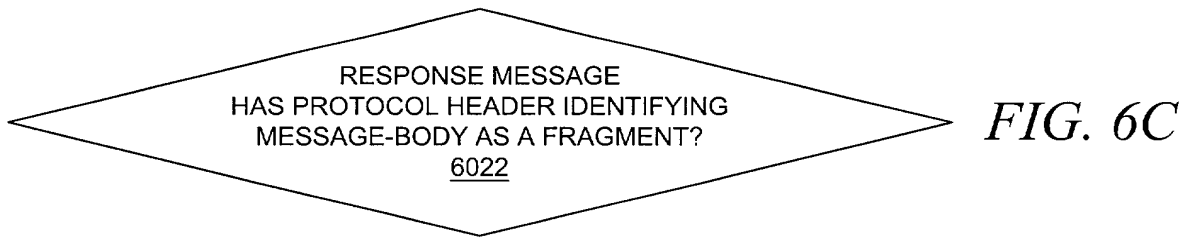


FIG. 6B

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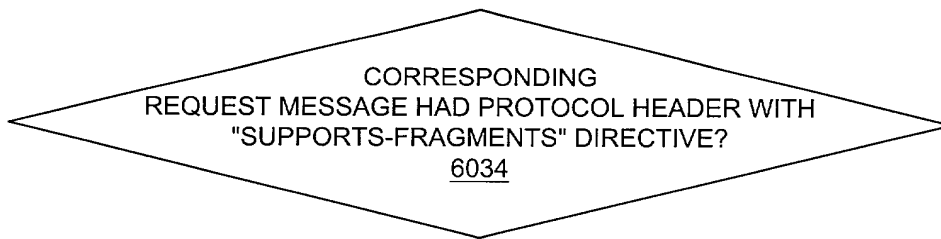


FIG. 6G

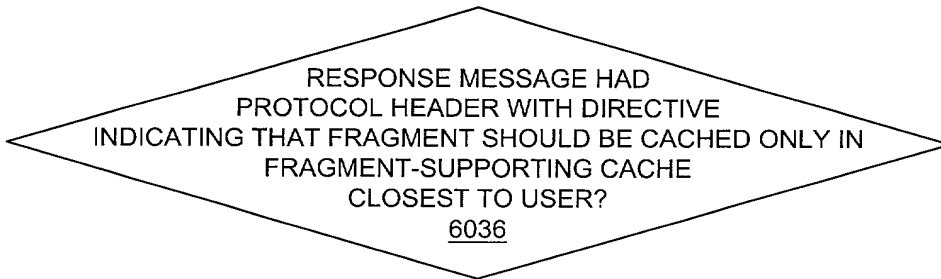


FIG. 6H



FIG. 6I

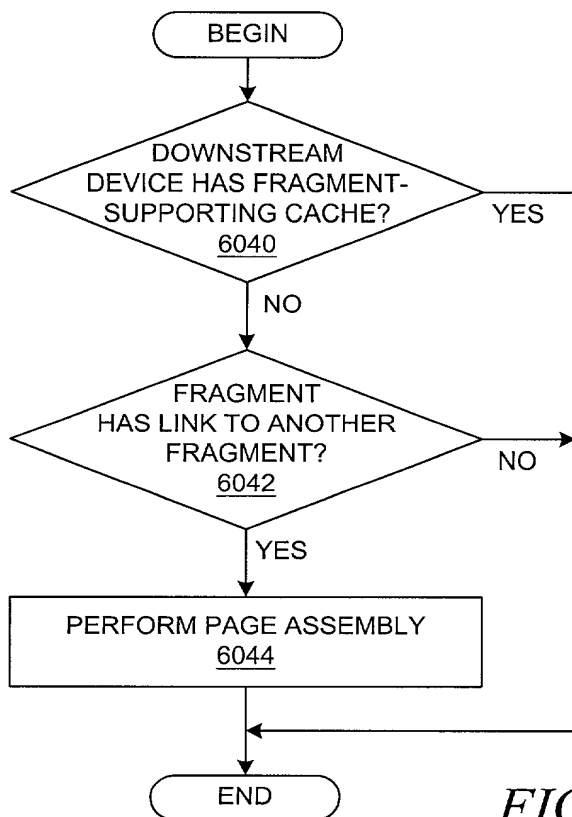


FIG. 6J

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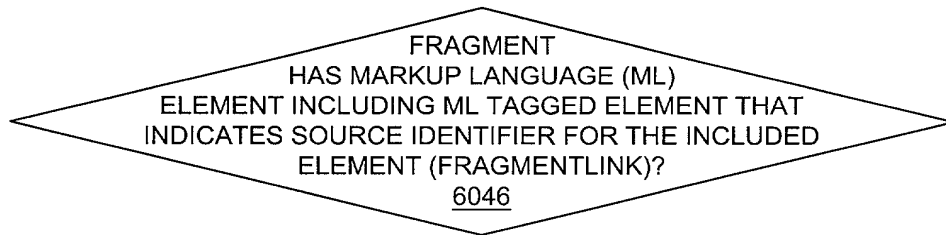


FIG. 6K

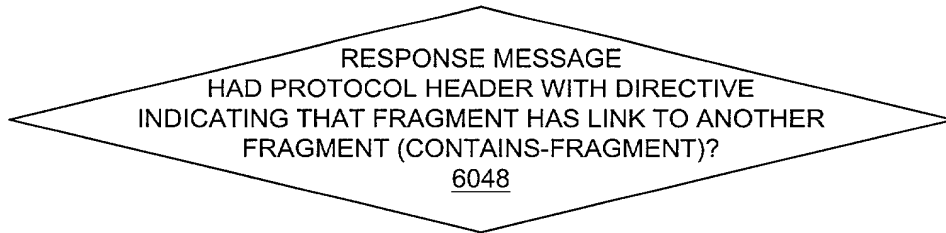


FIG. 6L



FIG. 6O

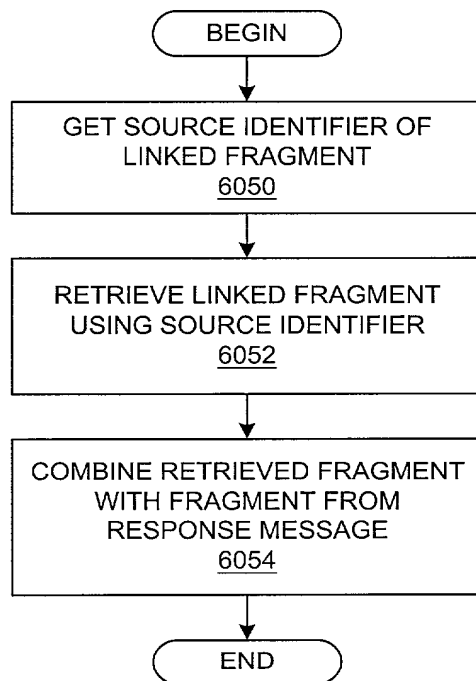


FIG. 6M

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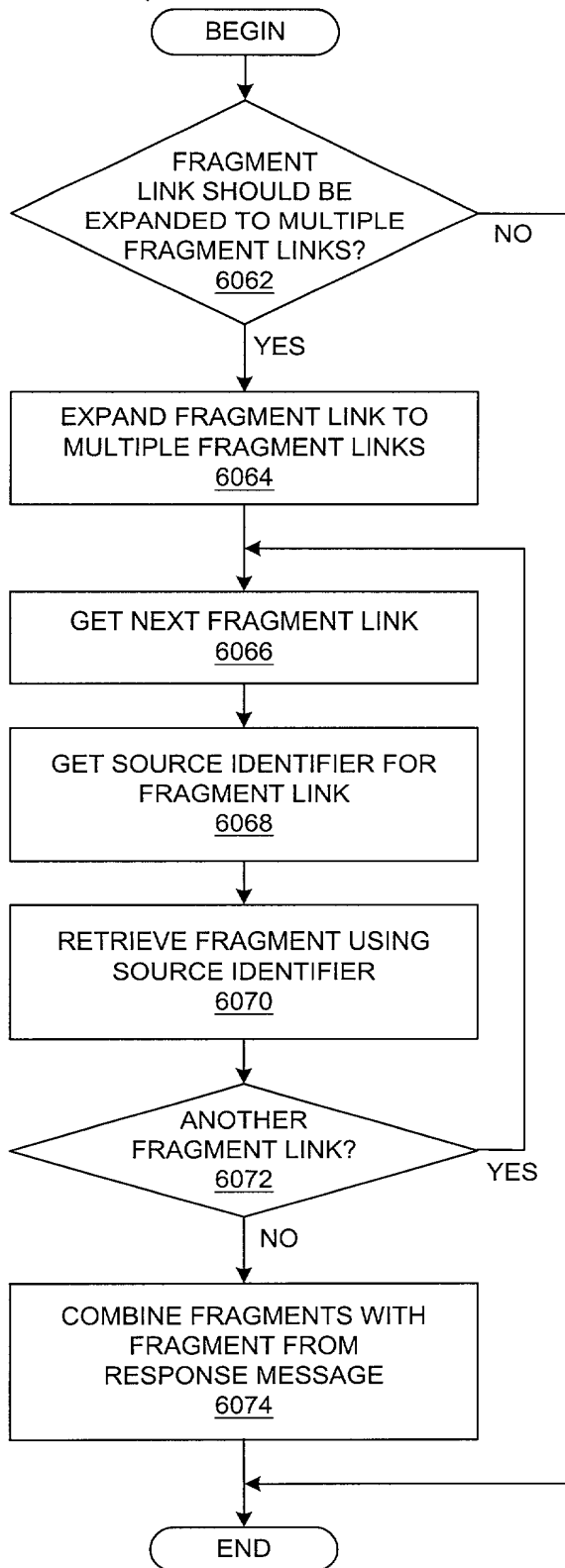


FIG. 6N

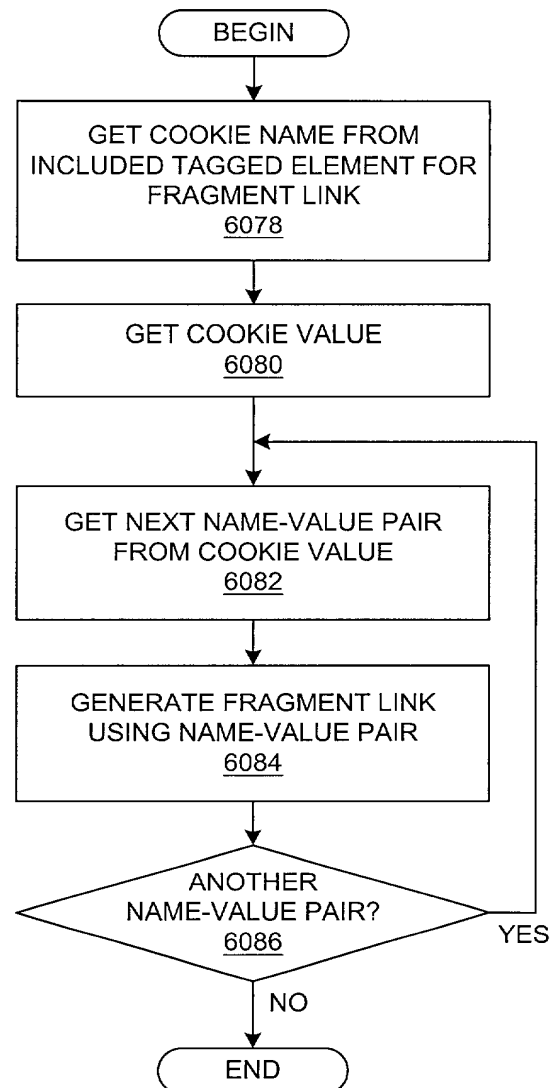


FIG. 6P

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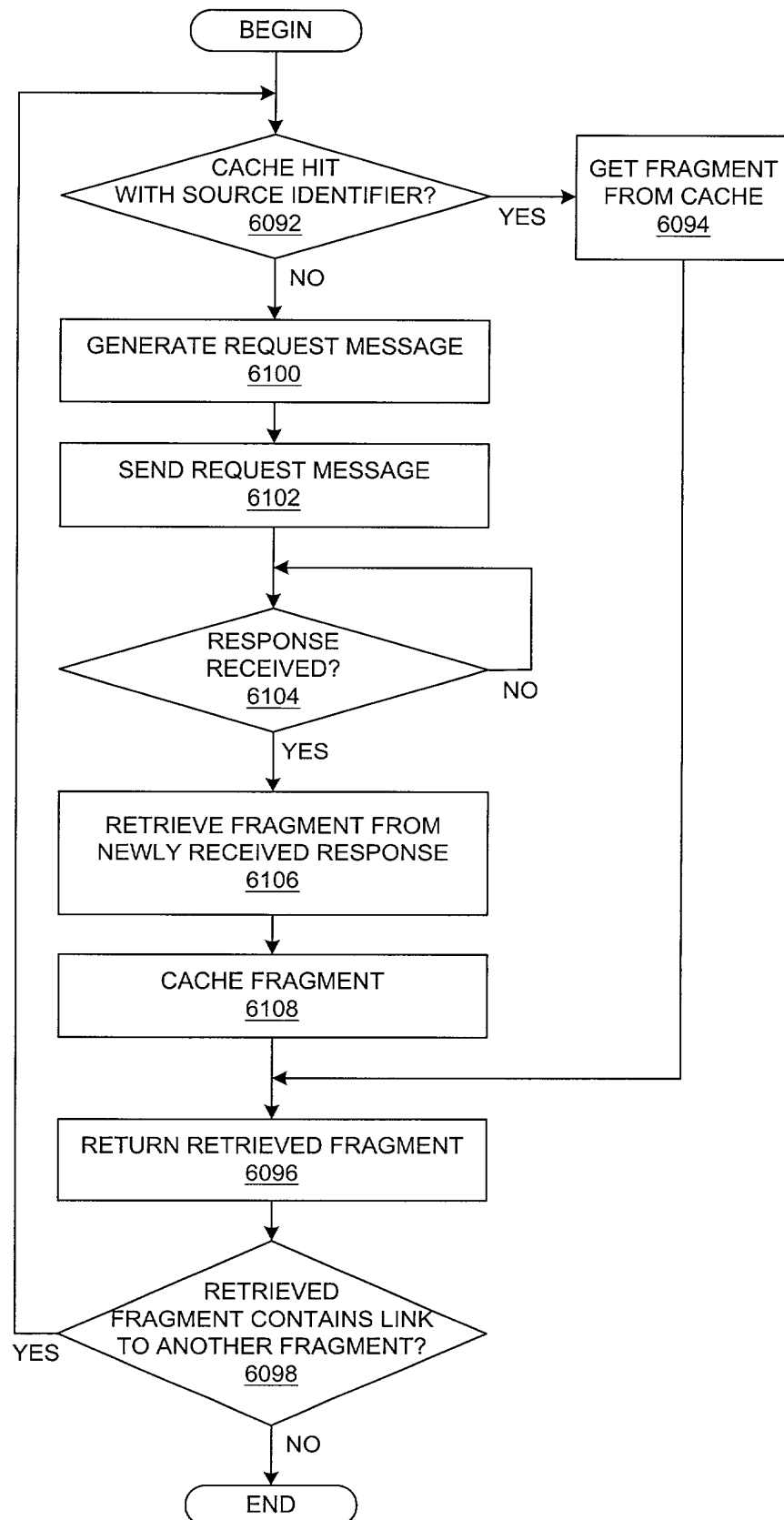


FIG. 6Q

FIG. 6Q

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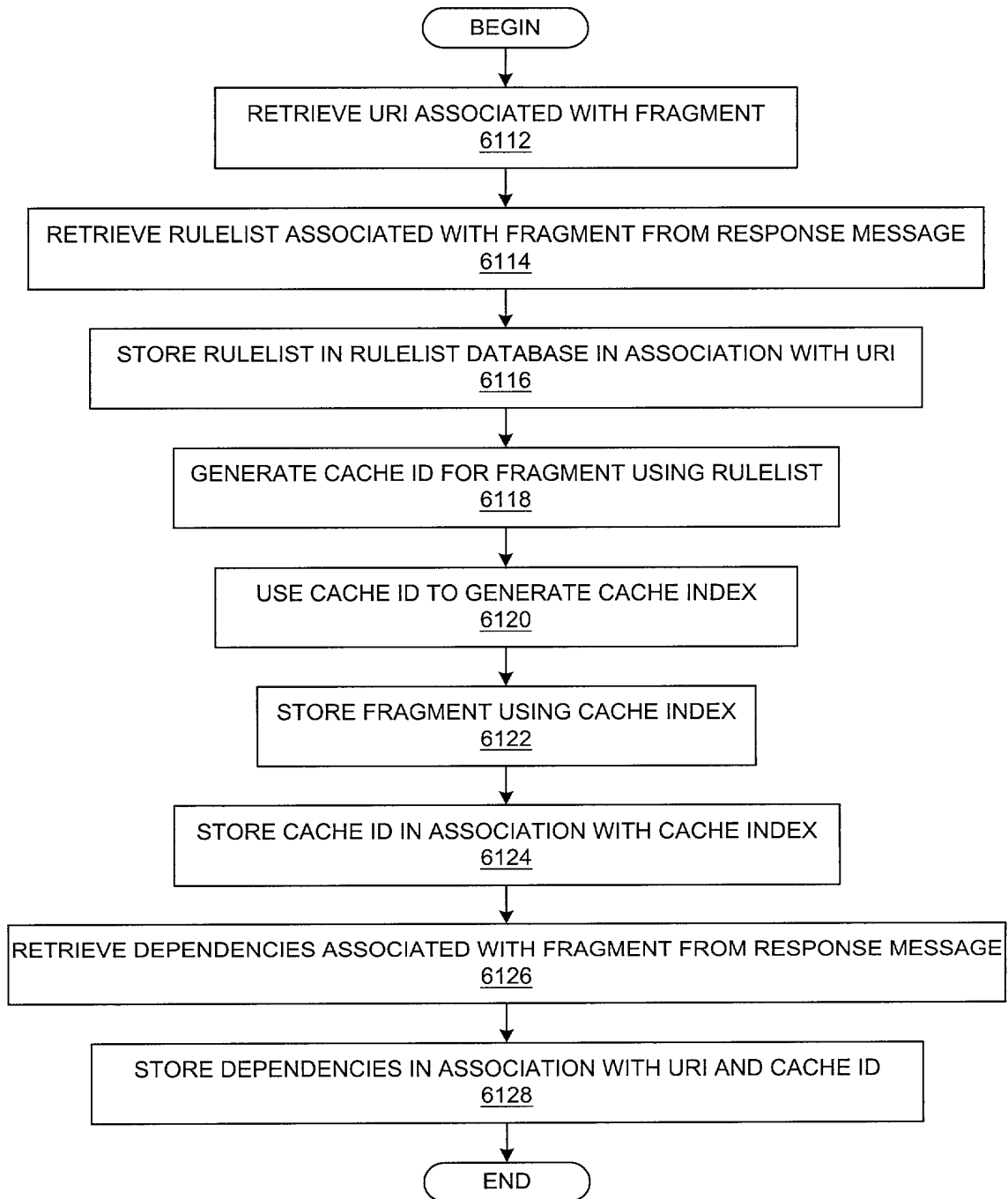


FIG. 6R

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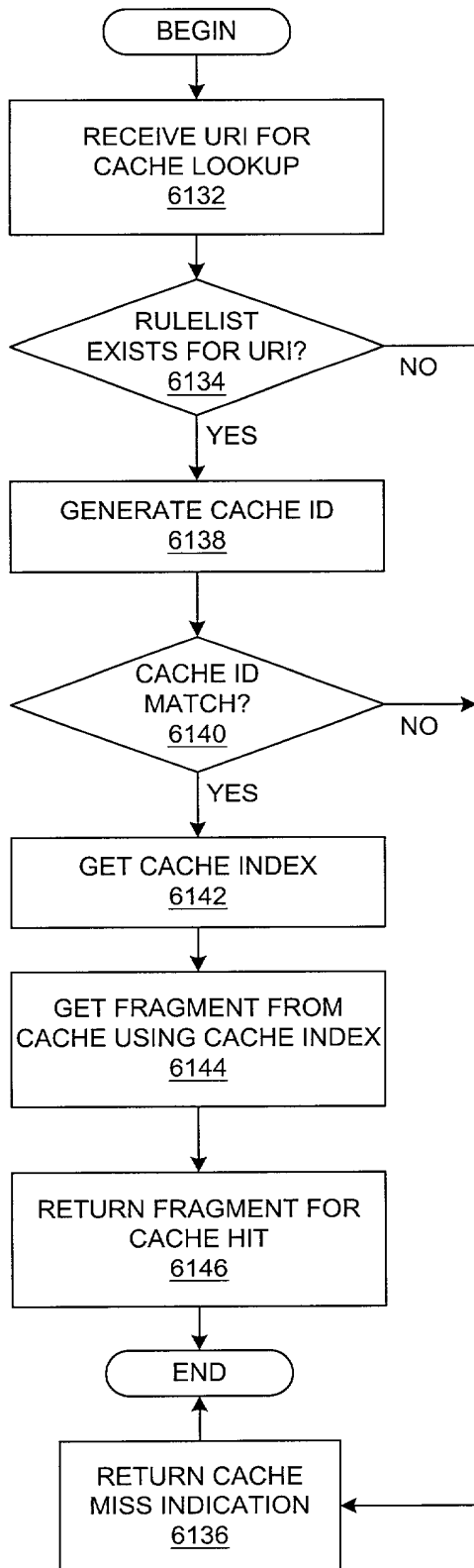


FIG. 6S

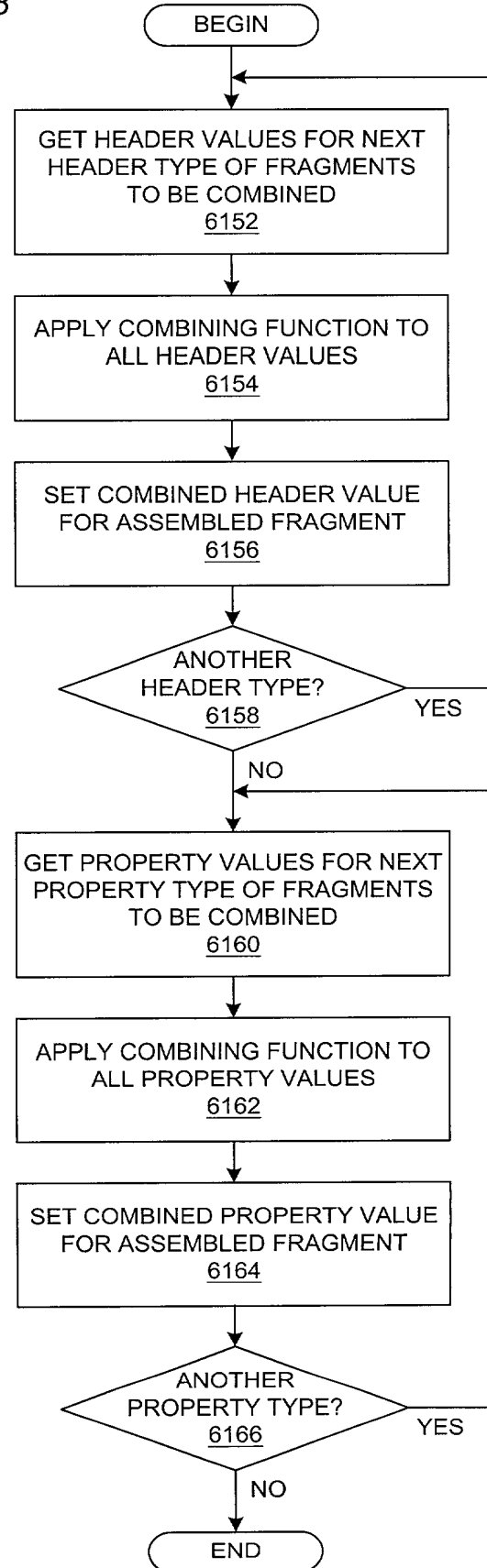
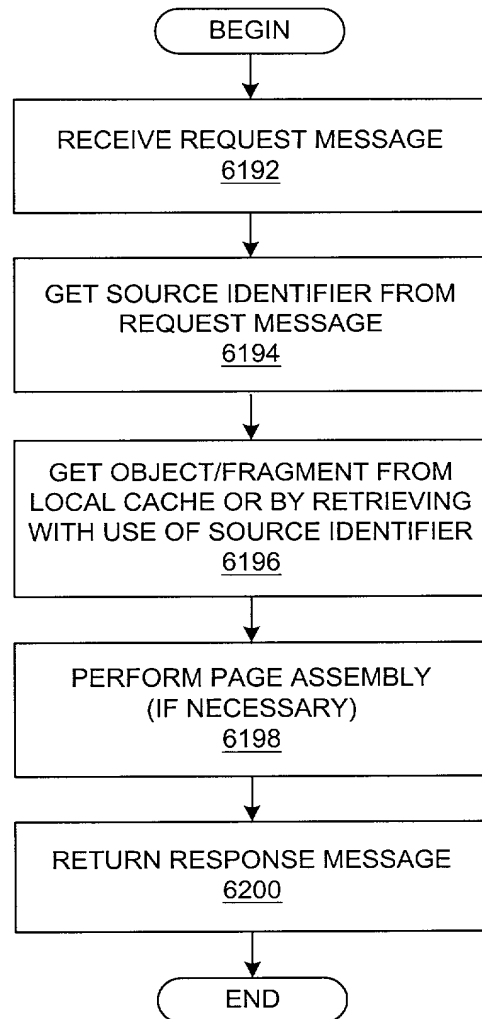
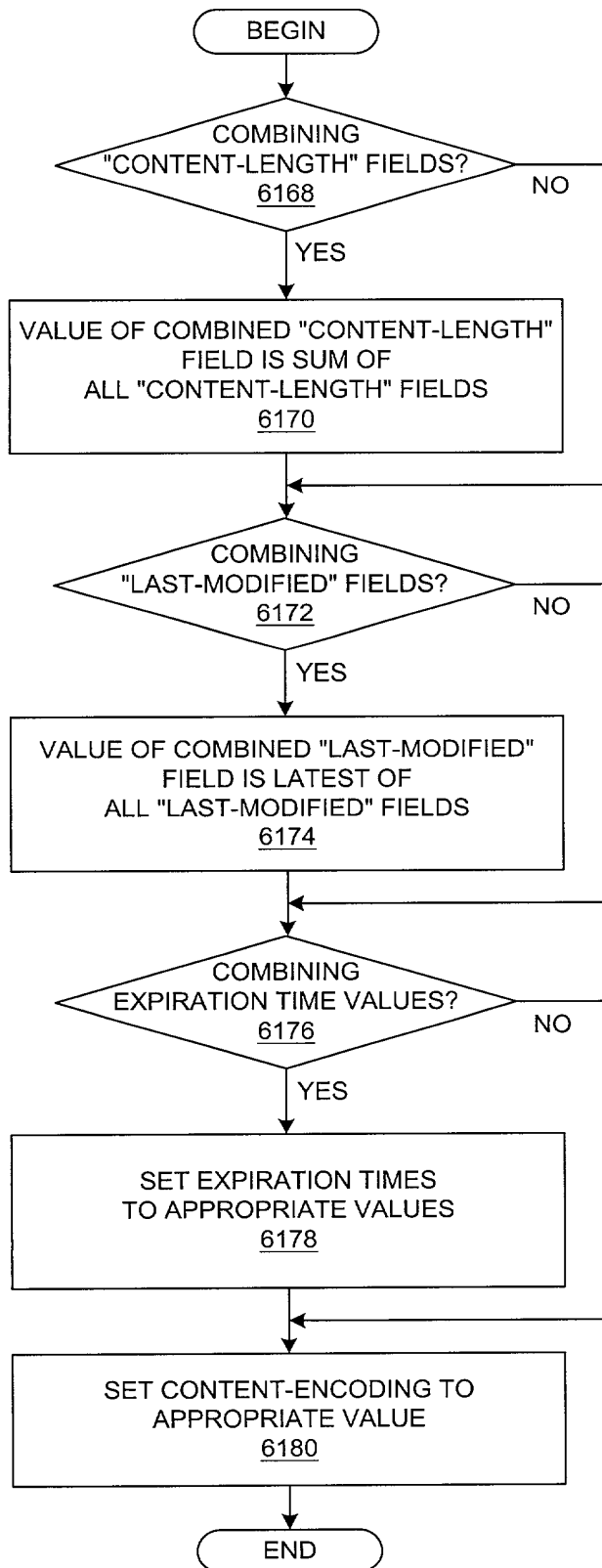


FIG. 6T

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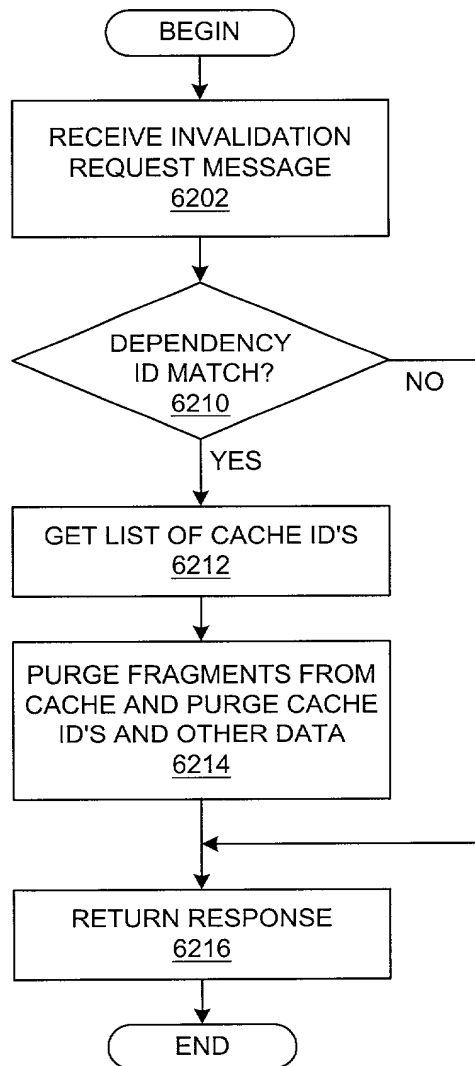
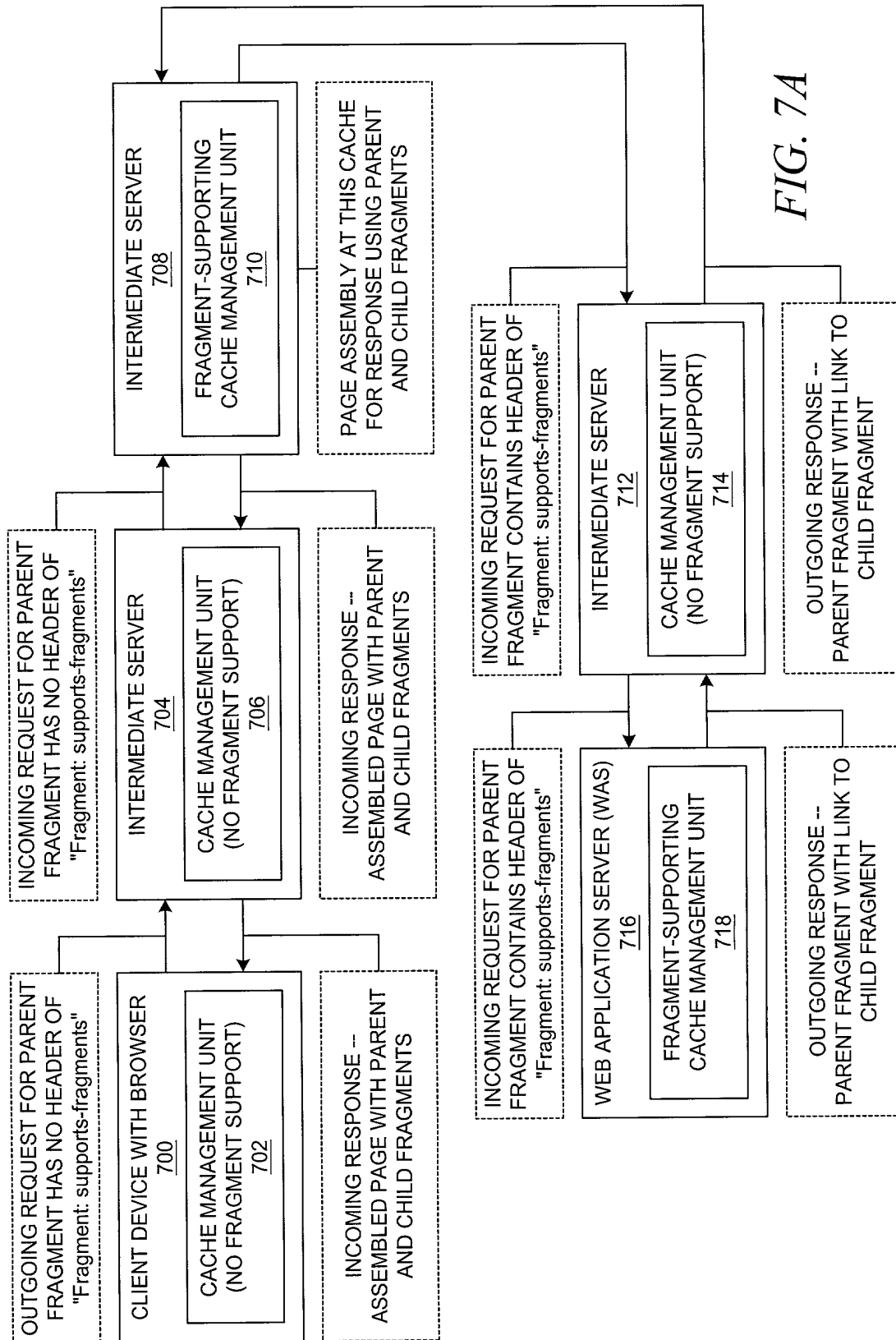
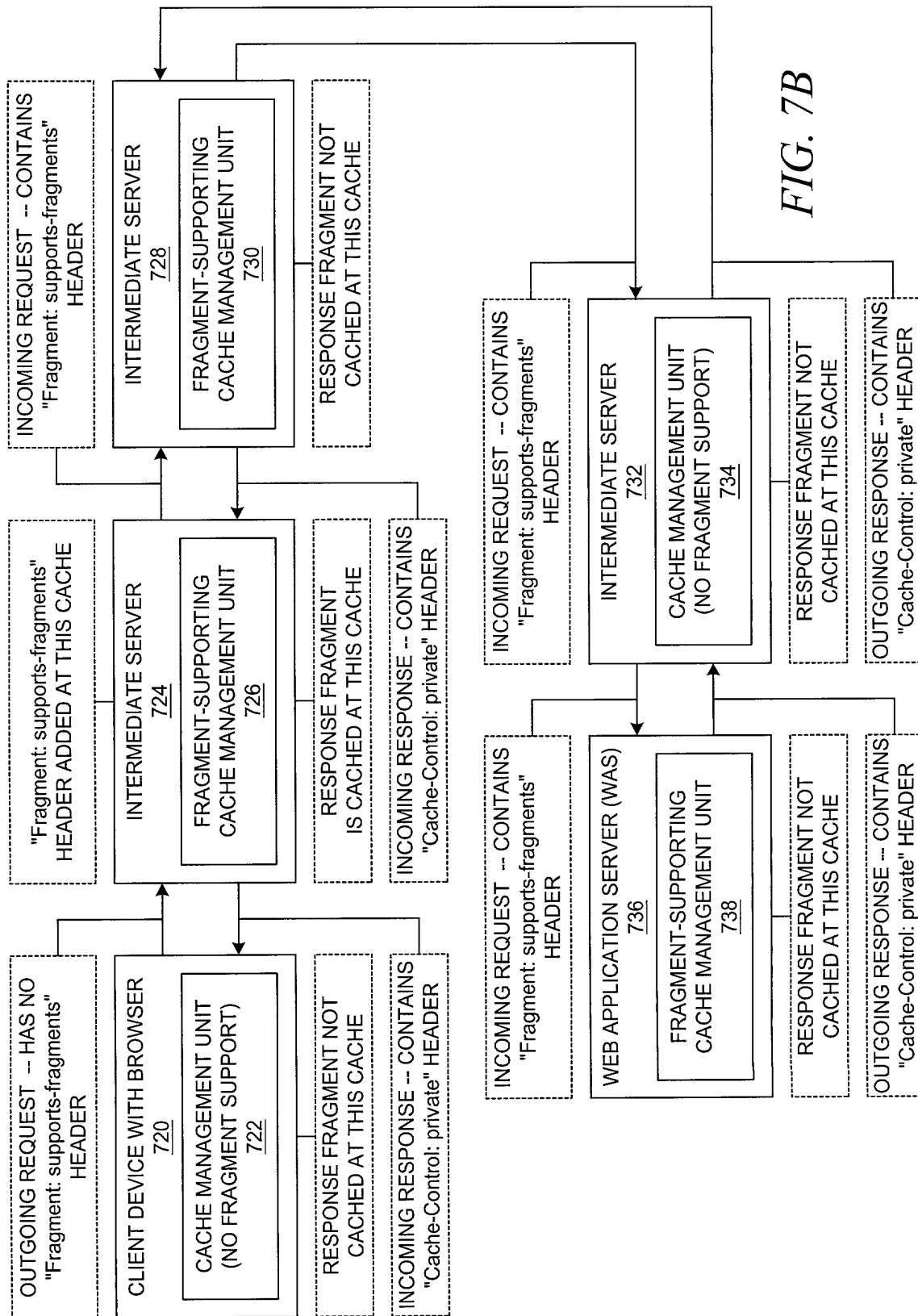


FIG. 6W

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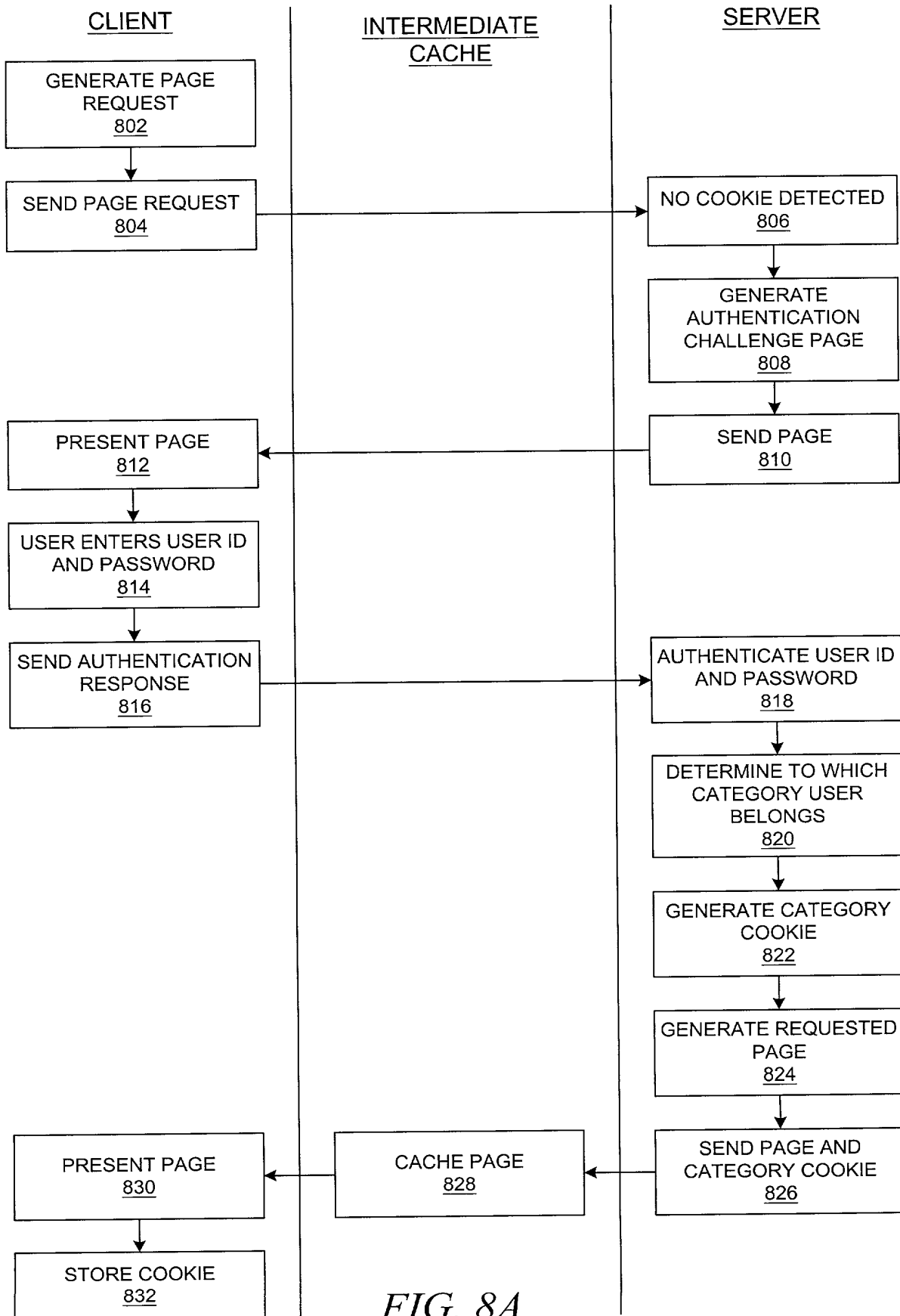


FIG. 8A

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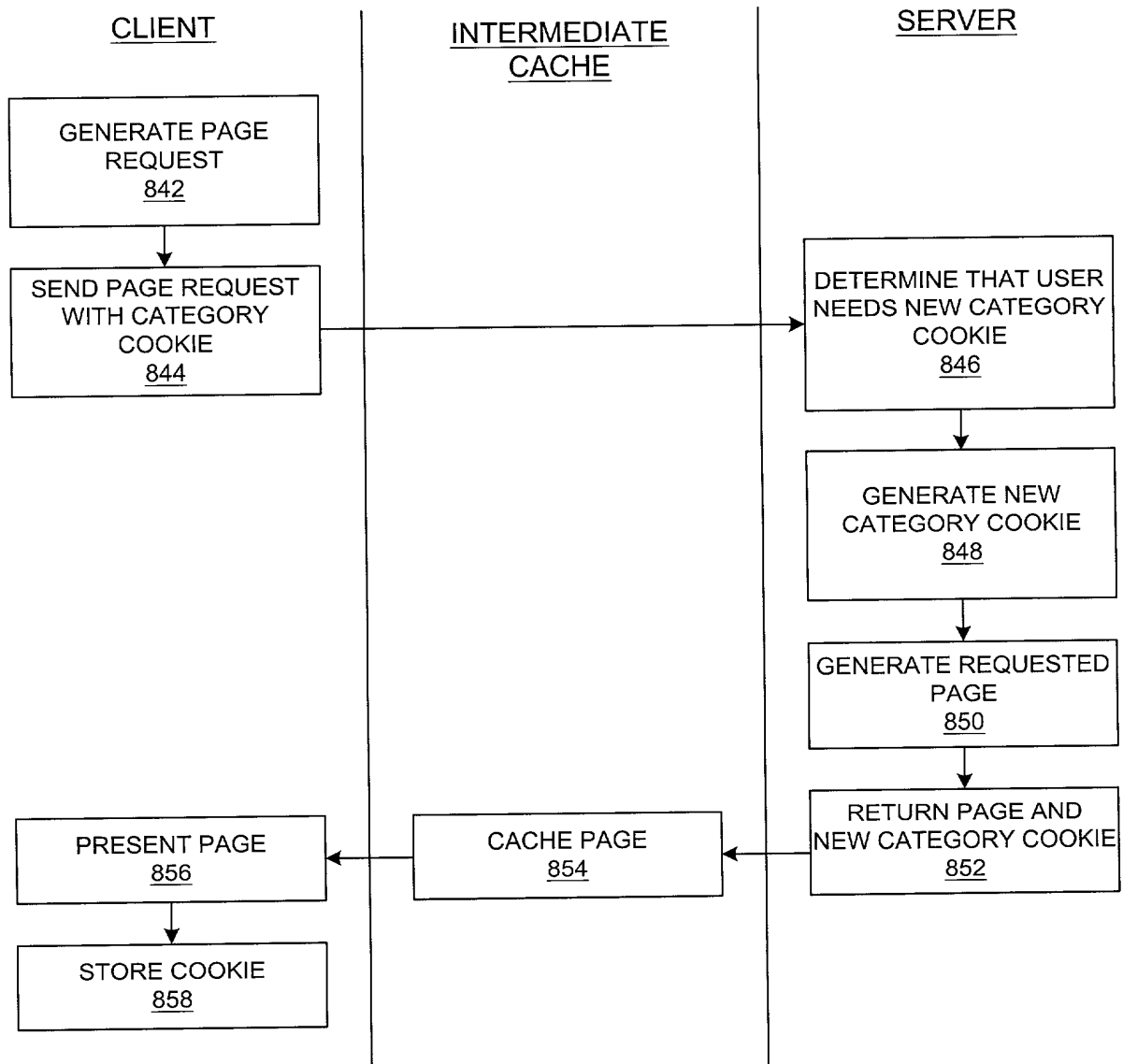


FIG. 8B

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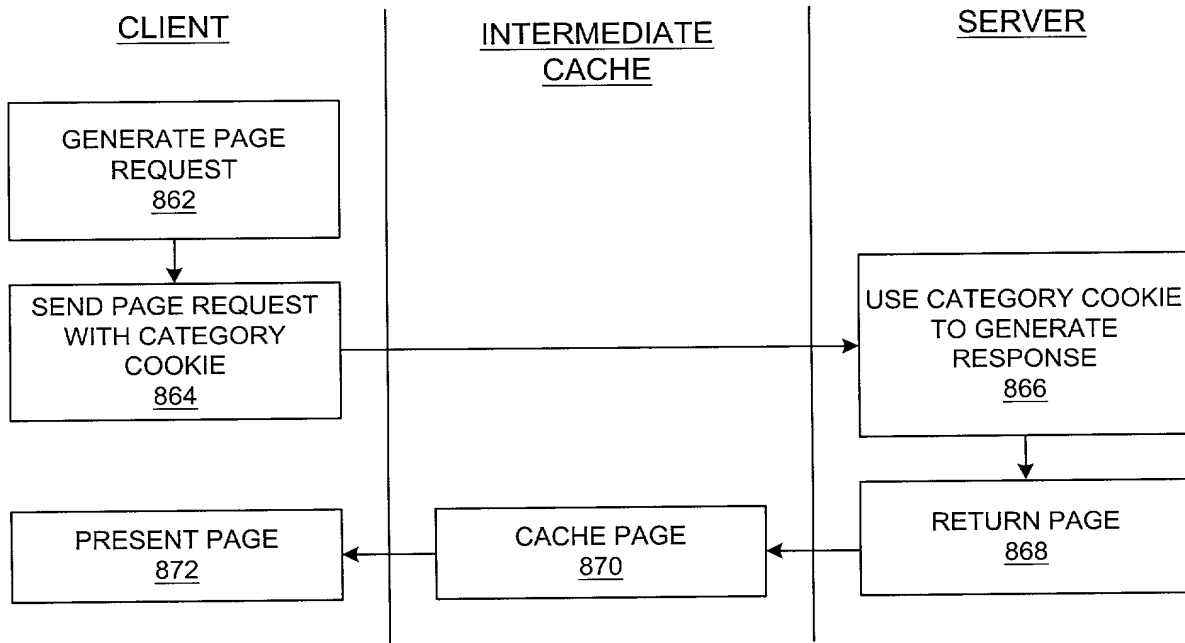


FIG. 8C

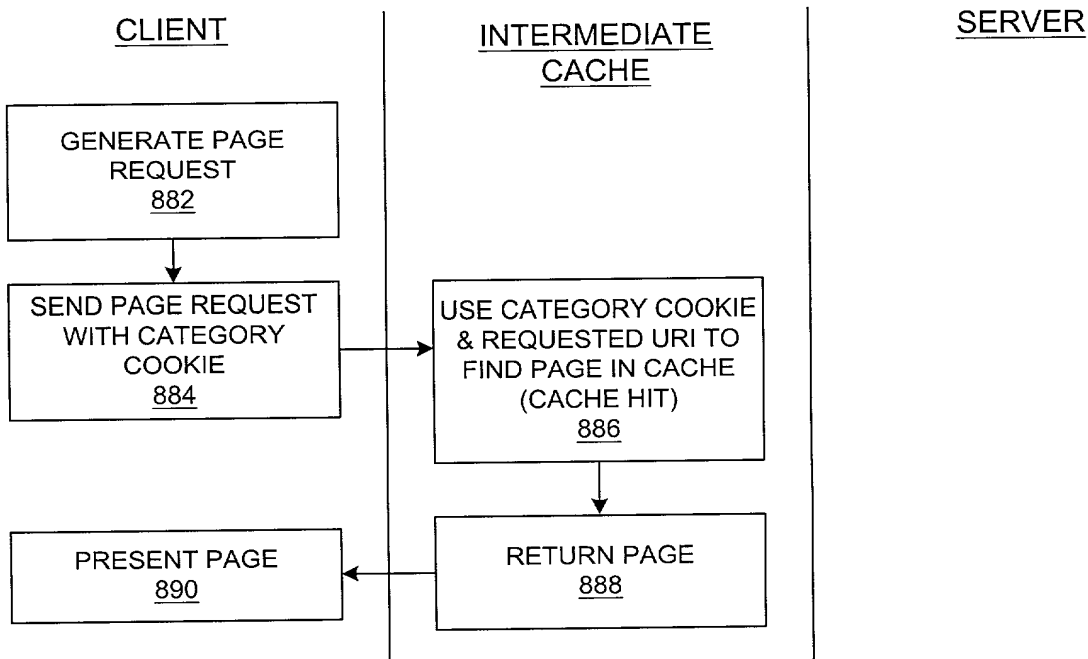


FIG. 8D

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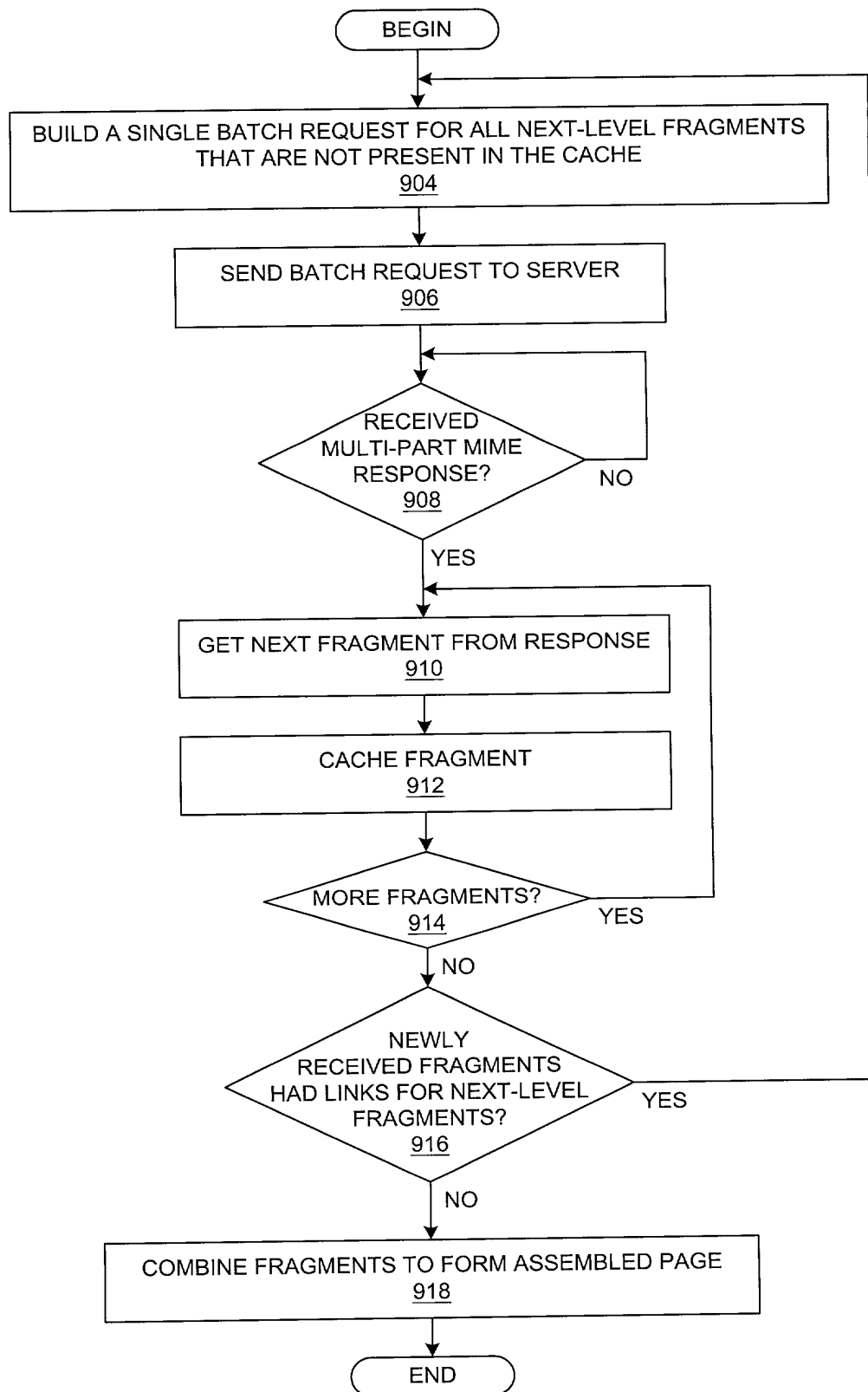


FIG. 9A

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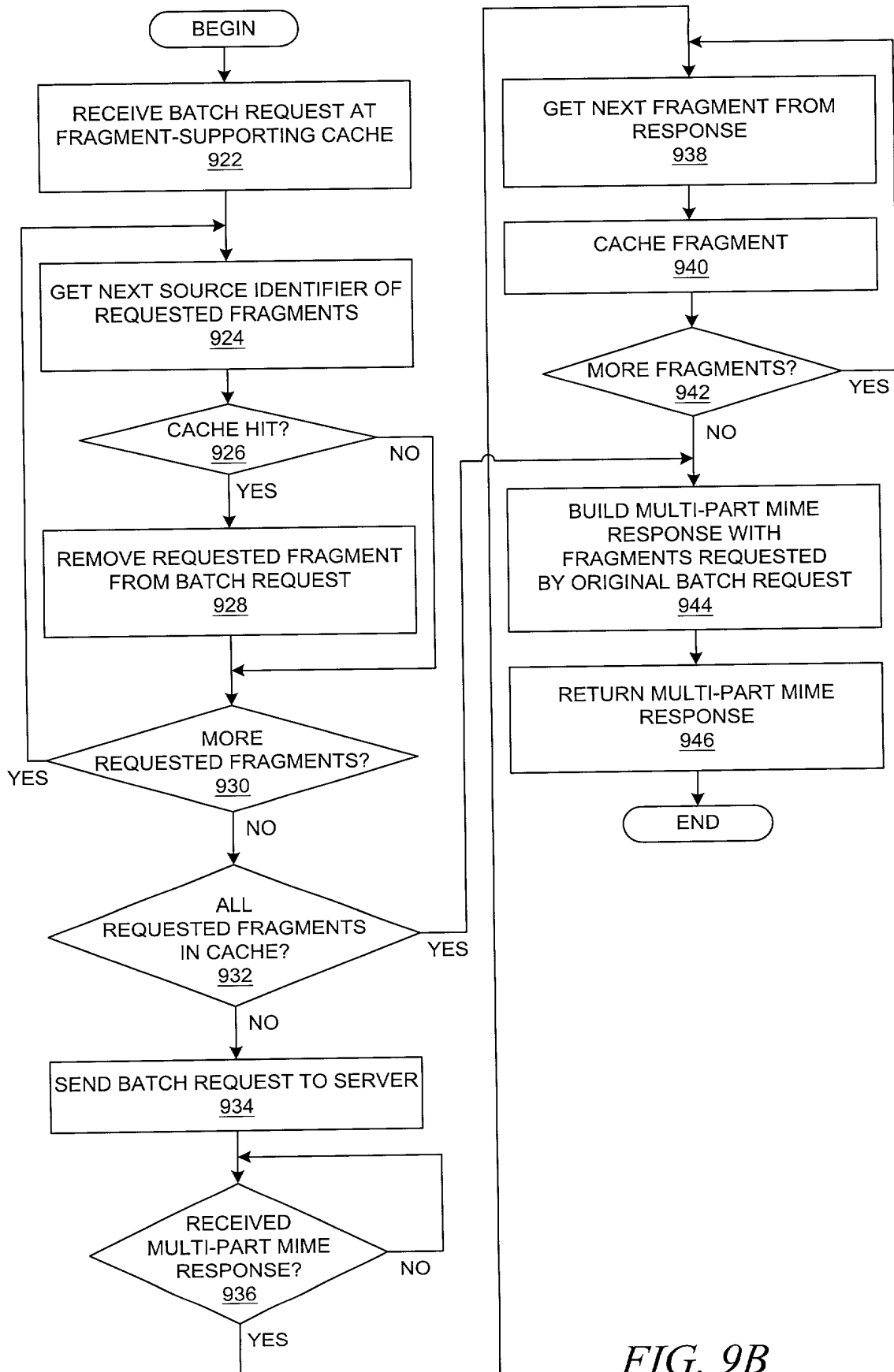


FIG. 9B

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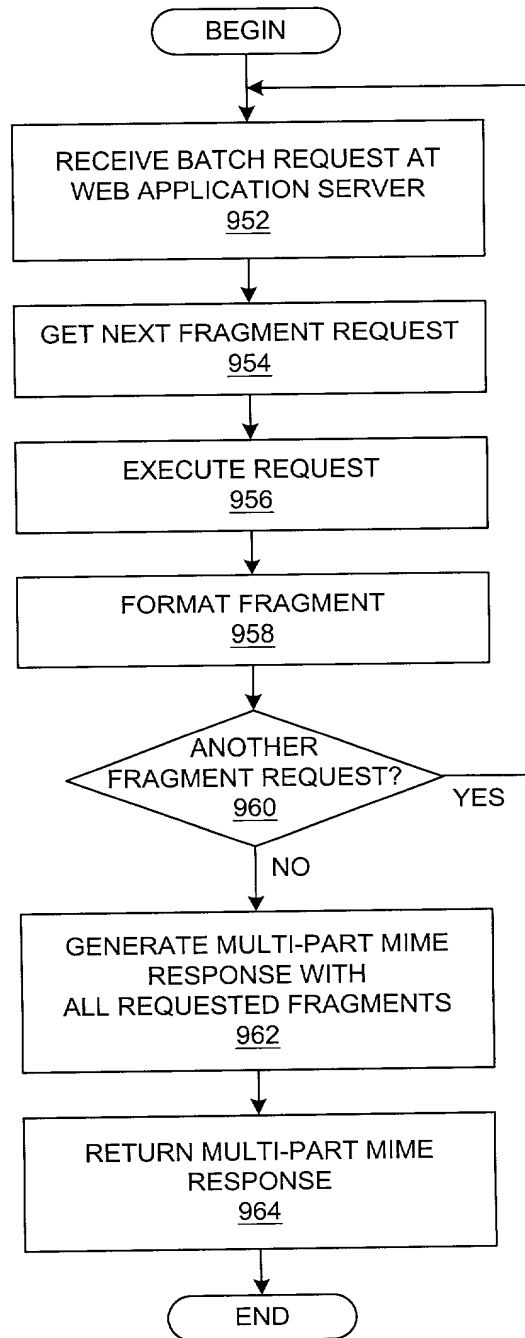


FIG. 9C

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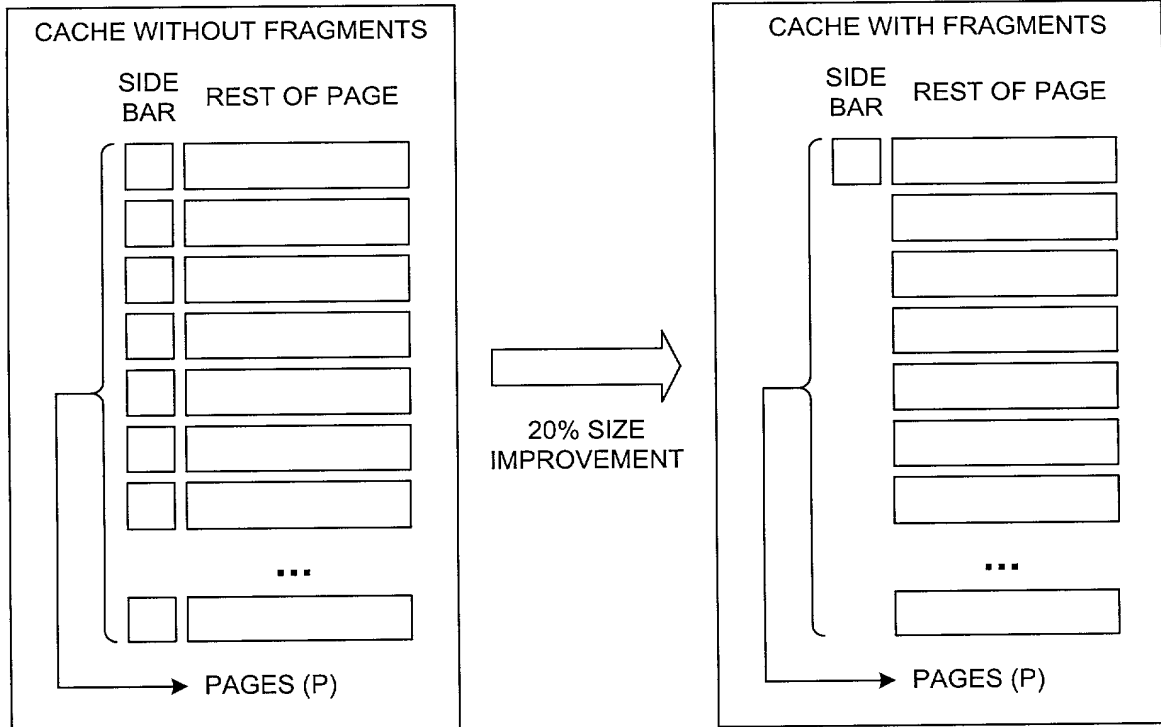


FIG. 10A

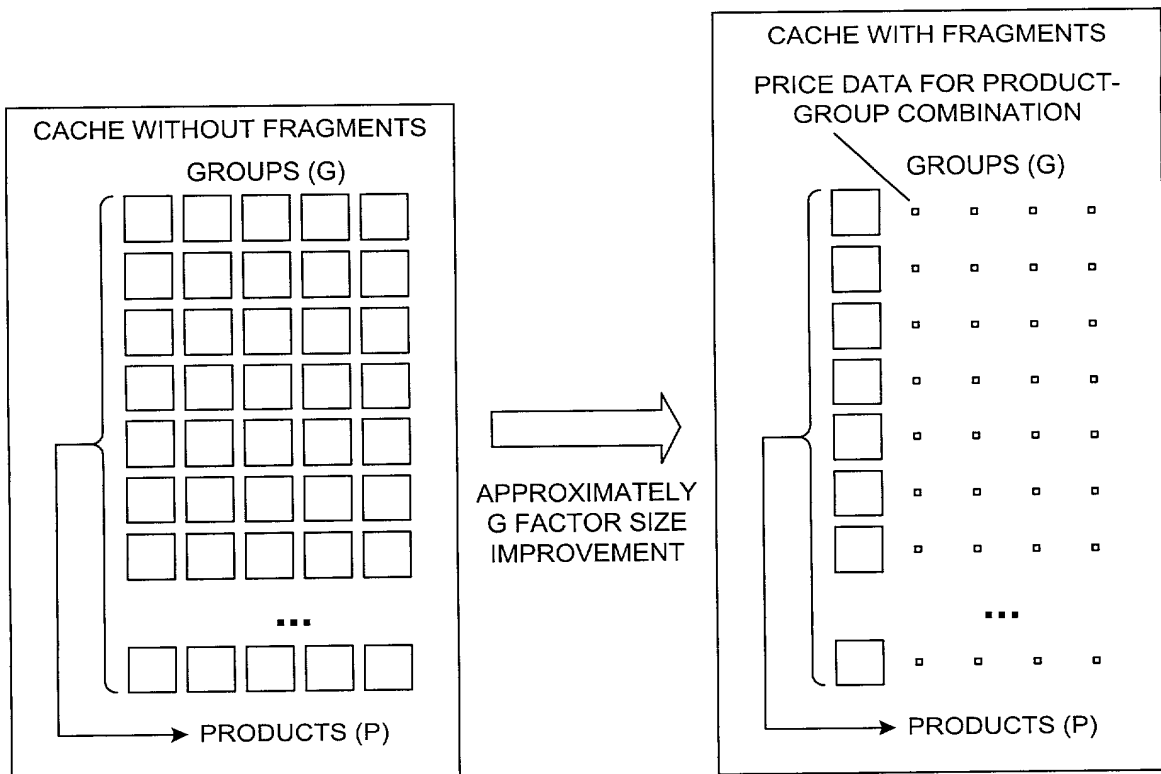


FIG. 10B

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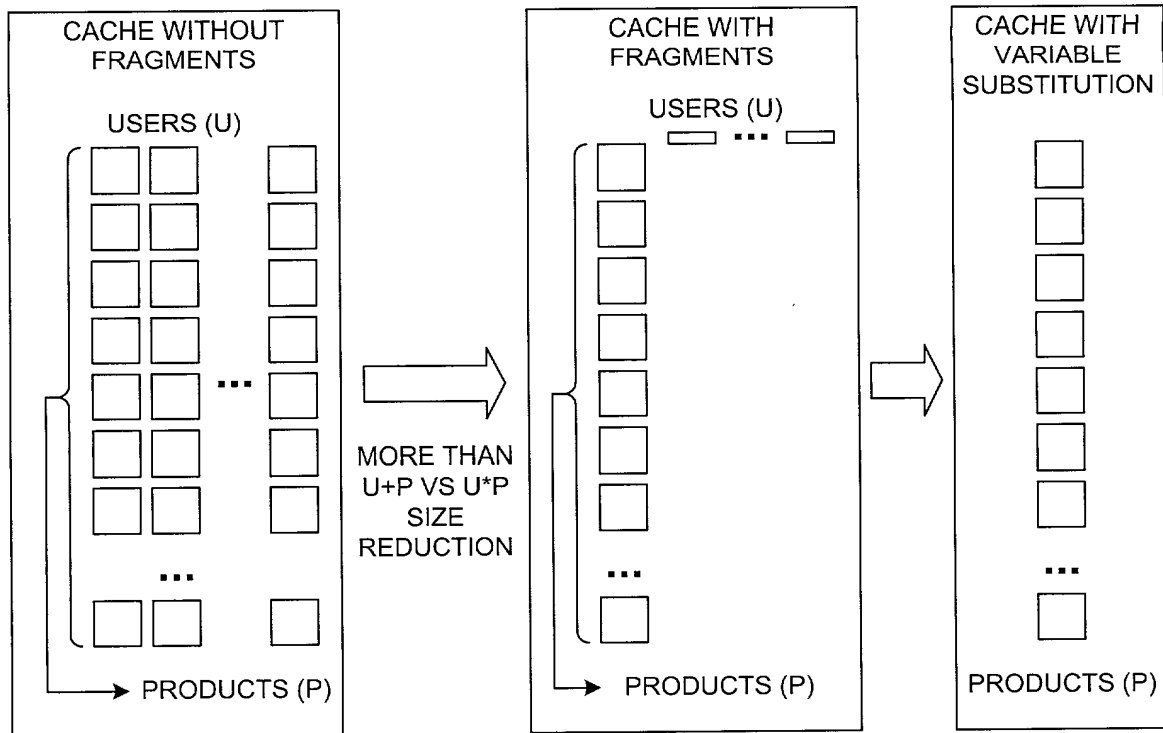


FIG. 10C

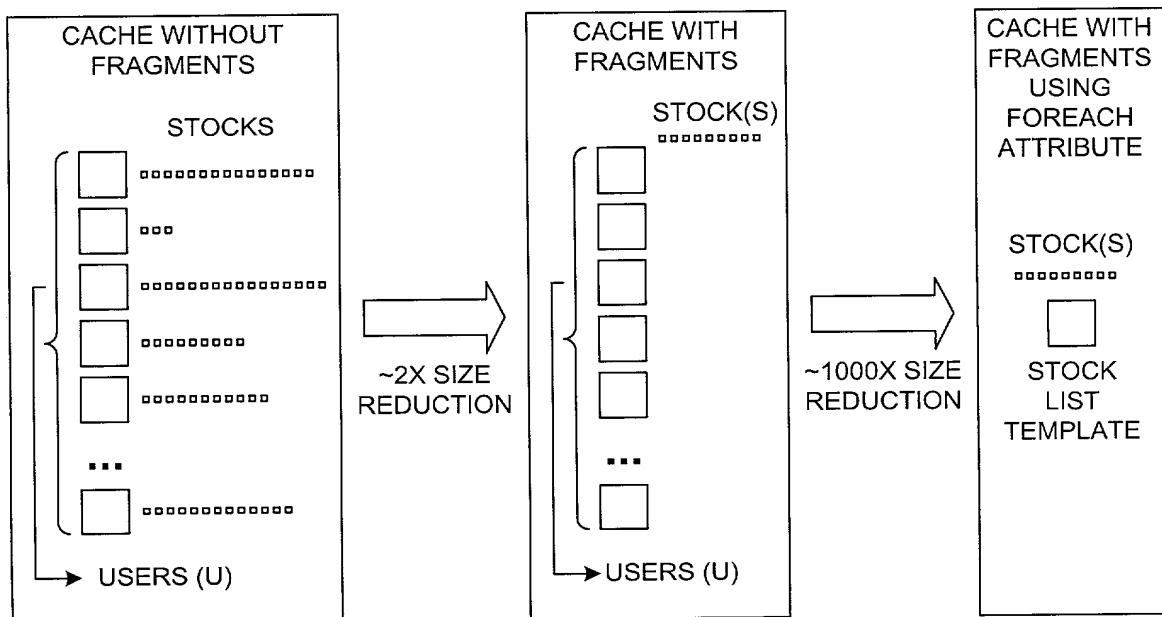
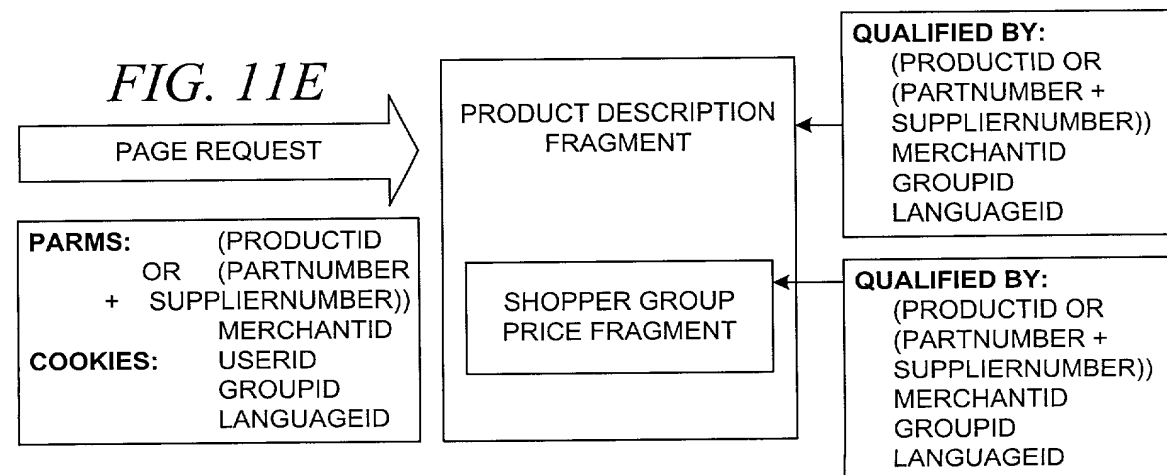
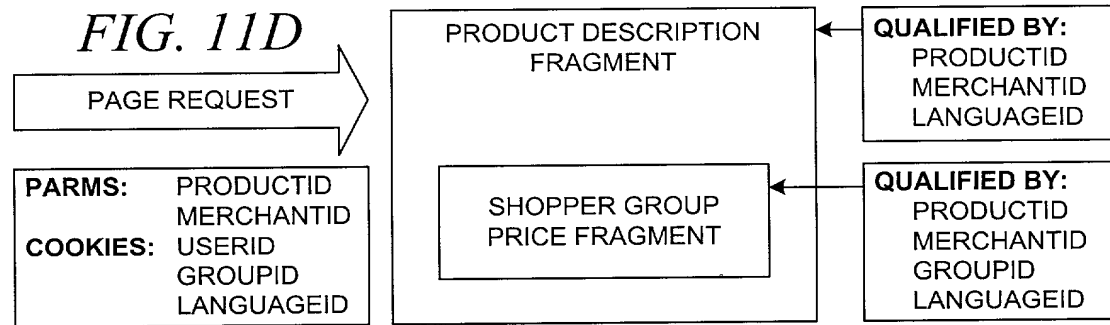
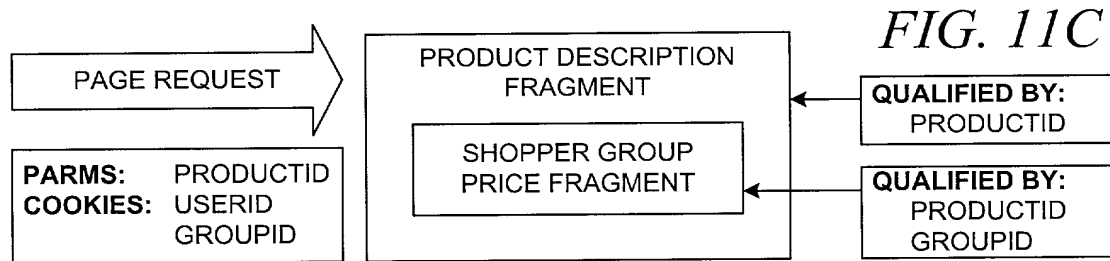
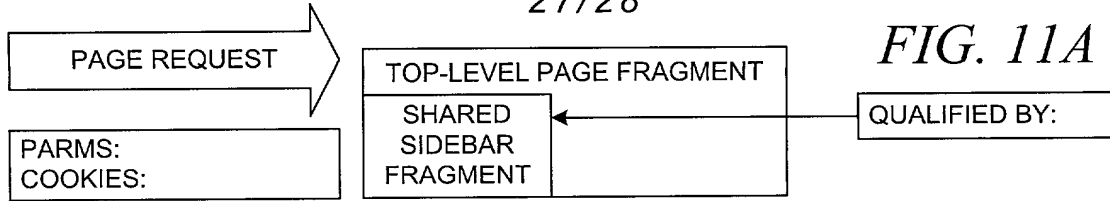


FIG. 10D

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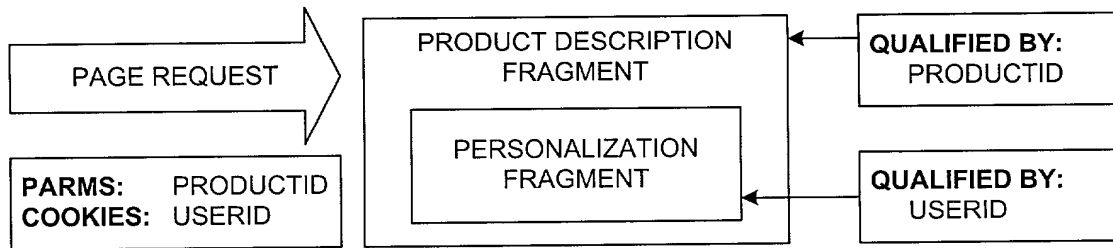


FIG. 11F

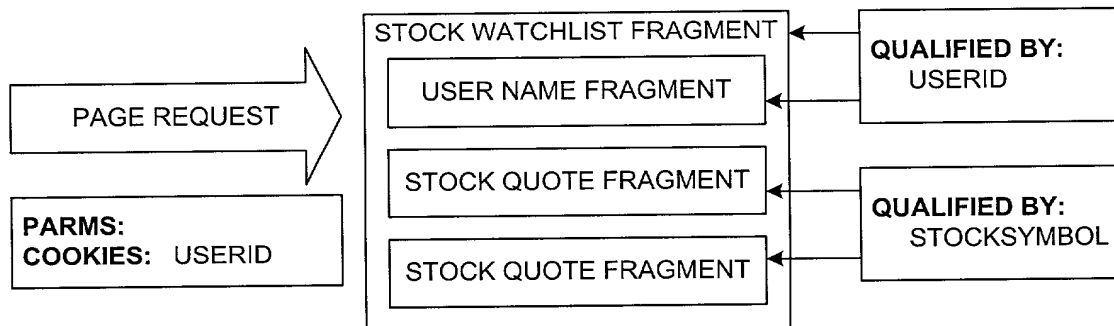


FIG. 11G

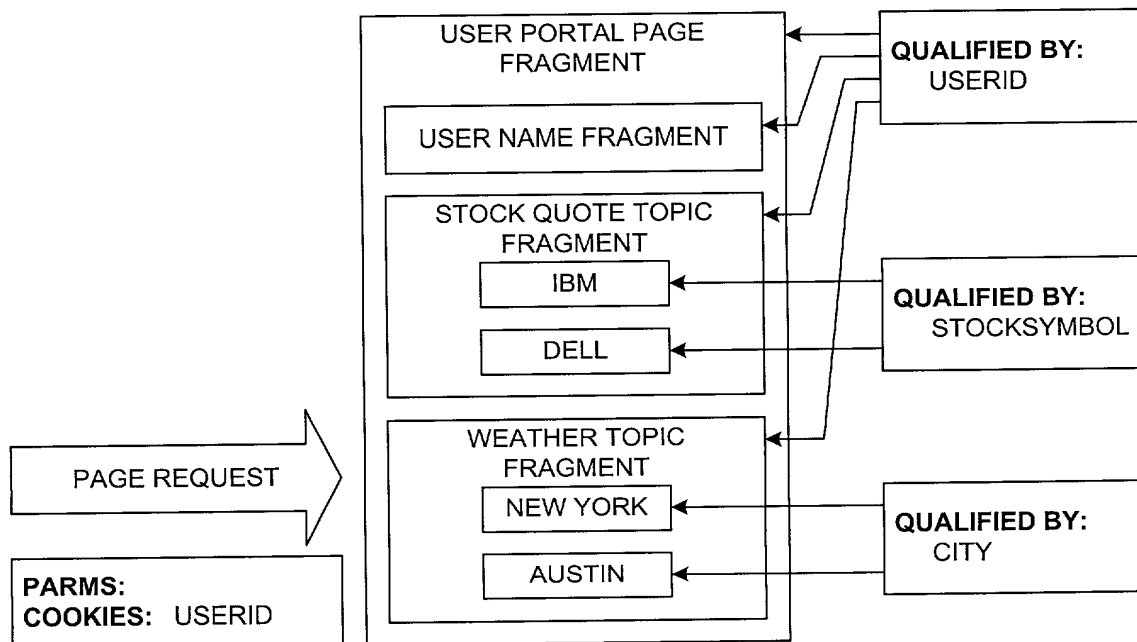


FIG. 11H

FIG. 11F